

ER-2 #809 10/30/15

Aircraft: [ER-2 - AFRC #809](#) ([See full schedule](#))

Flight Number: 16-9012

Payload Configuration: eMAS, AirMSPI-2, and AVIRIS instruments

Nav Data Collected: Yes

Total Flight Time: 5.7 hours

Comments: Flight 16-9012 took off at 0936 local and landed at 1518 local (5.7 hours). The temperature at altitude fluctuated more than usual (+or- 3 deg) which made it difficult to use airspeed hold. Had to use Mach hold. Sky clear all day except near Red Bluff, OR. The pilot was Steele.

Submitted by: Kevin Walsh on 11/02/15

Flight Segments:

From:	PMD	To:	PMD
Date:	10/30/15		
Flight Time:	4.2 hours		
Log Number:	162020	PI:	Robert Green
Funding Source:	Diane Wickland - NASA - SMD - ESD Terrestrial Ecology		
Purpose of Flight:	Science		
Comments:	AVIRIS successfully under-flew the Terra Satellite just off the coast near San Francisco over open water. Flew an AVIRIS line over Monterey Bay. Dean helped Denis out tremendously to navigate real-time updates to the flight plan.		

From:	PMD	To:	PMD
Date:	10/30/15		
Flight Time:	1 hours		
Log Number:	162019	PI:	Jeffrey Myers
Funding Source:	Steven Platnick - NASA - SMD - ESD EOS Project Scientist		
Purpose of Flight:	Check		
Comments:	Flight 16-9012 successfully checked out the eMAS instrument. The goal for eMAS was to fly at altitude for a minimum of 4 hours to cold soak the instrument. From James Jacobson: Before flight today, the TRU lines were checked, and the .ini file was edited to give the system the correct default values for flight ops. First off, no issue today with resetting scan line count. (Yay!) Aircraft +28v voltage still dropped a bit into flight, but no where near as big a drop as last time. In terms of the qualitative video assessment, it looks like there is less 60/120 Hz influencing the data, and more high freq coherent noise . . . this however is probably more due to actually flying at 6.25 scans/sec than anything else. This High freq noise is most apparent over water targets. Overall, I think that it was a fairly successful mission today.		

From:	PMD	To:	PMD
Date:	10/30/15		
Flight Time:	0.5 hours		
Log Number:	162022	PI:	David Diner
Funding Source:	Jack Kaye - NASA - SMD - ESD Director Research and Analysis		
Purpose of Flight:	Check		

Comments:

For AirMSPI-2, the N3 and N5 switches were swapped at the EIP. Fortunately, using the INMARSAT, the AirMSPI-2 team quickly determined that the switches were swapped. From Dave Diner: I'm very pleased to report that AirMSPI-2 had a successful test flight on Friday, October 30. This was a 5.7 hour flight, and AirMSPI-2 collected more than 15 dataruns throughout the entire flight, both in step-and-stare and sweep modes. The attached slide shows a set of monochrome quicklooks (uncalibrated, non-georectified) over Northern California. The two images at left are 645 nm intensity derived from the two polarimetric channels at this wavelength (they look similar, as expected), and the image at the right is degree of linear polarization (DOLP). The horizontal banding in the lower part of the DOLP images is possibly due to a mismatch between the polarization modulation function used to analyze the data and the actual one that occurred in flight. More sophisticated data reduction to eliminate this and other calibration-related artifacts will require implementation of ground processing software and test procedures that are still in the process of being adapted from AirMSPI-1. Quantitative analysis of the multispectral imagery, including contrast, signal levels, SNR, and spatial resolution require further investigation of the larger set of data acquired during the flight. Data export from the flight disk packs is a lengthy process at this time since we haven't yet had the chance to put in place the software needed for routine and more rapid download, as is done with AirMSPI-1. Preliminary perusal of the full set of quicklooks from the flight is expected to take place over the next several days. Initial indications are that the thermal control system and gimbal system also functioned well. We are still experiencing difficulties in maintaining the high vacuum levels for long durations, as needed for SWIR operation in flight. As reported previously we attribute this to outgassing of components inside the vacuum vessel. It is likely that a higher capacity getter will help significantly, but replacement is not possible until after the instrument returns to JPL. I want to thank the AirMSPI-2 team, the AFRC crew, as well as Rose Dominguez from eMAS for their support. Friday's flight was a major milestone in our MSPI technology development effort."

Flight Hour Summary:

	142019	152015	162020	172033
Flight Hours Approved in SOFRS	11	30		
Flight Hours Previously Approved		3.2	28.4	14.7
Total Used	7.8	4.8	13.7	0.5
Total Remaining				14.2

172033 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
04/06/17	17-9023	Check	0.5	0.5	14.2	

162020 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/30/15	16-9010	Check	1.9	1.9	26.5	
10/30/15	16-9012	Science	4.2	6.1	22.3	
01/12/16	16-9031	Science	3.2	9.3	19.1	
01/14/16	16-9035	Science	2.4	11.7	16.7	
02/09/16	16-9039	Science	2	13.7	14.7	

152015 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
11/07/14	15-6004	Science	3	3	30.2	
04/21/15	15-9034	Check	1.8	4.8	28.4	

162019 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/28/15	16-9011	Check	1	1	20.5	
10/30/15	16-9012	Check	1	2	19.5	
06/29/16	16-9042	Check	4.4	6.4	15.1	

152014 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
04/15/15	15-6025	Check	3	3	24	

04/22/15	15-6026	Check	2.5	5.5	21.5
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142012 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/24/13	14-6004	Science	2	2	28.1	
03/31/14	14-6029	Science	1.1	3.1	27	

162022 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/30/15	16-9012	Check	0.5	0.5	5.5	
11/02/15	16-9011	Check	0.9	1.4	4.6	
02/05/16	16-9038	Science	2.7	4.1	1.9	

Source URL: https://airbornescience.nasa.gov/flight_reports/ER-2_809_10_30_15#comment-0

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NASA Official: Bruce A. Tagg

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

	152025	162022	172034
Flight Hours Approved in SOFRS	6		
Flight Hours Previously Approved		6	1.9
Total Used	0	4.1	0
Total Remaining			1.9

	132013	142012	152014	162019	172029
Flight Hours Approved in SOFRS	25	5.1			
Flight Hours Previously Approved		25	27	21.5	15.1
Total Used	0	3.1	5.5	6.4	0
Total Remaining					15.1

142019 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
08/18/14 - 08/19/14	14-9038	Science	7.8	7.8	3.2	